

PACKET DATA ANALYSIS WITH EFFICIENT AND FLEXIBLE PARSING CAPABILITIES

ABSTRACT OF THE DISCLOSURE

Methods and apparatus which facilitate the handling of data between platforms interconnected by any of a variety of network environments are disclosed. In general terms, the present invention represents an improvement over conventional packet parsing and searching mechanisms. The parse mechanism sequentially analyzes each character of the packet data and passes relevant characters to the search mechanism as soon as each character is reached. Preferably, the characters of each data field are parsed character-by-character. In one implementation, prior to searching a relevant data field, the parser initializes the appropriate search mechanism based on at least the data field type (*e.g.*, the cookie field or URL field of an HTTP request). Each character of the relevant data is then passed sequentially to the search mechanism, where a search state are obtained for each passed character. Accordingly, the parser passes each character of the relevant data fields to the search mechanism. Since the parser passes the well-defined fields of standard protocols, such as HTTP and FTP, parsing may be efficiently performed without referencing memory (*e.g.*, parsing is implemented in micro-code). When the parser reaches the end of the relevant data field, the parser may then cause the search mechanism to output search results associated with the search state of the last searched character. Alternatively, the parser may initiate another search for another data field, which is subsequently parsed and searched character-by-character as recited above for the first field.